Topic 5e - Practical Guide: Accessing data (part 2) - In-depth

Hello. My name is Tobias Reinicke. And I'm an expert in geographical information systems and remote sensing.

For the past eight or nine years, I've been working in this field. And I've witnessed the evolution of the dissemination of the data, how it's been acquired, and what it's being used for.

In the past couple of weeks of this course you will have seen a lot of this data being used for various reasons. And in this last week I'll be showing you step by step how you can acquire that same data and play with it yourself to produce beautiful imagery or interesting and educational output.

For that most satellite providers generally provide an online portal for you to download data from. The European Space Agency has also created a fairly sleek and new one for this. And this is the portal I'll be using to download some data, and processing it this session.

So here we are. This is the homepage of the Scientific Data Hub. There are a few options ahead of you. There is a Scientific Hub option, which you may or may not want to press. And there's also a Sentinel-2 pre-ops hub. I would suggest for Sentinel-2 data you stick with that, as you don't need to register.

So let's go ahead and click on the middle icon of the five. So here we are. We have the homepage of the Sentinel-2 Data Hub. And I want to go ahead and select and find an image of London.

So I take my mouse and I scroll in towards London a little bit. I'll start by clicking and dragging a square around the area of London. Then at the top left, we have a menu that will expand into additional filters.

And I might want to find an image that was mentioned before in the course by Matt Disney, which was from, I believe, the 9th of December, 2015. Here I'll scroll through the dates, select a date range that will cover that date in December, and click Search.

You will get a login. However, the login you will need is guest, guest. These details are on the actual page themselves, but also on the page beforehand.

So I'll have to click Search again. And here I go. And it's going to start finding me a couple of images that were acquired on that day in December.

Now, on the left-hand side, you can see the options that are being shown to me. Whenever I hover over them, you can see their footprints on the map being highlighted. And if I want some more information, I can interrogate those using this I button.

To change your panning to zooming functionality, remember to click the top right icon. And there you go. I can zoom out a little bit further.

So we found two pieces of imagery. I can now scroll out and show you the actual outline of these two datasets. These square-ish lines are called footprints. And these footprints are the outlines of the actual data that has been acquired.

Each footprint represents a product. And in satellite imagery terms, a product is a type of processed image that will allow you to create outputs of it. When satellite data comes in from satellite as raw data, the quality is not good enough to be used straight away by analysts. A few processes have to happen. And the output of these processes-- which is done by the satellite company-- they are called products.

So we have two products set in front of us. I'd like to select the one that covers London most, which is the top one. So I've clicked on it. It's been highlighted. And the row on the top left has also been highlighted to tell me that that is the one of interest.

There are a couple of buttons just on this row. There's zoom to the area, which if I click, it will pan the map to it. The next button across is of interest. It will show you the actual product details. Again, it's a quick little map about the footprint, which I mentioned earlier. And a quick view-- a very low resolution preview of what that image looks like.

On the right, you can see the quickview here It's a collection of tiles because that's what the product has been created to be, and that's what we want to download.

Further down, in both columns, you can see a summary of the data, you can see which instruments of that satellite it's been acquired by, you can see the size what the cloud cover is there you go cloud cover here is 38%.

But also what the folder of that image contains all sorts of data and metadata. And once I'm happy with that, I'd quite like to just download it. So on the very bottom, right, there's a little download icon, and I'm going to click that. And as soon as I do, I will send a request to the European Space Agency servers and retrieve that data set. It's going to take a while.